Mineral Mining, Employment and Political Participation in Sub-Saharan Africa

Kjersti Knudsen Aarrestad

Master of Philosophy in Economics

Department of Economics

UNIVERSITY OF OSLO

May 2014

Mineral Mining, Employment and Political Participation in Sub-Saharan Africa

Mineral Mining, Employment and Political Participation in Sub-Saharan Africa

2014

Kjersti Knudsen Aarrestad

http://www.duo.uio.no/

Trykk: Reprosentralen, Universitetet i Oslo

Abstract

This thesis adds to the literature on local welfare effects of resource extraction industries. I investigate how political participation rates and resource curse effects are influenced by the opening and closing of mines in SSA. Based on past research I hypothesize that increased employment and income leads to higher participation rates as a result of more lenient individual resource constraints. However, many SSA countries have a history of poor institutional quality, and when they discover natural resources; most of them are hit by what is commonly referred to as the resource curse. High levels of corruption, political intimidation and declining measures of free and fair elections are examples of this, and I also look into how these parameters are influenced by mining activity. By employing a difference in difference strategy on Afrobarometer survey data and GPS-coordinates on future, present and past mines in SSA, my results show that demonstration activity is positively influenced whilst there's no clear effect on voting. The resource curse effect variables on the other hand, seem to be strongly negatively influenced by mining activity. When examining how the resource curse effects influence participation rates I find that they have a negative effect on voting and a positive effect on demonstration. This result could also be driven by another third variable, such as inequality, which is again effected by mining activity and windfalls. The conclusion could consequently be that the variables related to the resource constraint theory are at best offset by resource curse effects. Any measures that have been taken to include the local population in the economic growth process spurred by resources have mostly failed. As a result, people are voicing their discontent in demonstrations rather than more traditional political channels such as voting, as this no longer has any real effect on political outcomes.

Preface

Before starting on my thesis the people I had discussed the experience with made me envisage that the four upcoming months were going to be mental torture of the worst kind. I have rather found it to be an exceptionally fun and educational process with plenty of late evenings... It's been a great experience that I wouldn't have been without. For this I have many people to thank.

First of all I want to thank my adviser Andreas Kotsadam for all his help and advice with the thesis, he writes excellent do-files! Secondly, a special thanks to the ESOP research centre for the financial support and office space I've received. They have also provided me with unlimited amounts of tea and hot chocolate, which is, needless to say, invaluable to a master's student. To my fellow economics students and especially the other ESOP stipend recipients; this experience would have been so much more boring without you!

Last but not least, I want to thank all my closest friends and family. You've been an excellent source of discussion, proofreading and motivation when I needed it the most. Thank you!

Any mistakes that have been made or inaccuracies that aren't accounted for are entirely of my own doing.

Oslo, May 2014
Kjersti Knudsen Aarrestad

Table of Contents

Tables

Figures

1 Introduction

Since the beginning of the 1990's an increasing number of African states have adopted democratic rule and electoral institutions. Although the consolidation process in most countries is still on-going, the last 20 years have entailed a major transfer of political power from elites to the masses. Even if this can be regarded as an immensely important transition in modern African history, most Sub-Saharan African countries (SSA) still struggle with high levels of inequality and poverty in addition to rampant crime and corruption. This doesn't only hurt the political stability and the legitimacy of the governments, but also profoundly impedes their economic growth (Van der Ploeg, 2011).

However, the resource and commodity-boom that has developed in the aftermath of the entrance of major newly industrialised economies in the global market, with China in particular, has resulted in unprecedented economic growth for many of the resource-rich SSA countries. The demand for, and the prices of African resources have soared, effectively placing African governments in an entirely new position both economically and politically. The resource-boom consequently entails both huge possibilities and challenges for African countries. With their enormous potential for development it is paramount that they manage their resources in such a way that they reap as many benefits from it as possible. In order to create broad economic growth in the SSA, these countries have to avoid a deepening of the problems with corrupt institutions and civil servants. The so-called resource curse must in other words be avoided. Rent-seeking, nepotism, inefficiency and vast levels of inequality must be fought if the SSA countries are to enter a positive cycle. (Mehlum et al, 2006; Van der Ploeg, 2011)

One vital component is then to ensure that the windfalls and possible multiplier effects benefit local communities as well as the general population (Eggert, 2012; UNECA, 2010; Morris et al, 2011). However, it may seem that many of these countries are developing in the wrong direction. Over the past couple of years several African countries have received wide negative media attention as a result of strikes, demonstrations and civil unrest in mining communities across the continent. Citizens have stood up against low wages, corruption and violations of

safety and environmental laws. The clash between mining workers on strike and federal police in Marikana, South Africa amounted to the singular most tragic incident where 34 people were killed and plenty more injured.

These protests and demonstrations that have come in the wake of the resource boom shows that many ordinary people feel bypassed, and have not been given the opportunity to take part in their countries' resource-led economic growth. For improving their opportunity to do so, scholars point out that governments need to start facilitating for local and national businesses to enter the value chain of the resource extraction process. If the companies that manage the resources make use of locally produced products and services, country-wide economic growth can ensue. The effects of increased resource extraction can then potentially lead to higher employment rates and income in addition to increased capacity building and education levels. Resource abundance does consequently have the potential to contribute to lower inequality rates and higher living standards, both for the locals as well as for the population as a whole (Morris et al., 2011; Wright and Czelusta, 2004; Eggert 2002)

However, in order for these linkages and multipliers to take effect it is vital that politicians both on a national and local level take responsibility for ensuring that good policies are passed, that these are acted on and that they are monitored over time so that the poorer, less resourceful part of the population actually get their share. Previous research has shown how much the outcomes can vary depending on institutional quality and policy action (Eggert, 2002; UNECA, 2010; Morris et al, 2011).

In order for politicians to be held accountable for their actions the countries must have a functioning political system with citizens that participate. The notion that all votes and voices count equally is at the heart of the democratic ideal and it is therefore a huge problem that research shows that those with less income, education and employment vote and participate less than their more advantaged co-citizens (Bartels, 2005; Brady et al., 1995; Griffin and Newman, 2005; Isaksson, 2010; Verba et al., 1995). Furthermore, the preferences of people at the lower end of the income distribution in addition to those who don't participate are largely ignored by their representatives, meaning that policies on the political agenda are skewed in favour of those who already have the most(Bartels, 2005; Gilens, 2005; and Griffin and Newman, 2005). Consequently, both economic and political inequalities can potentially worsen as a result.

This line of research focuses on how structural inequalities influence an individual's resource constraint with respect to political participation. The more information, skill, time and money you have determines how much you participate and/or contribute. The determinants can consequently be individual with respect to income and education level or contextual with respect to the size and diversity of your social network (Brady et. al., 1995).

One would perhaps think that this perspective on political participation would be especially relevant in an SSA context, as more people have less of both time and money. However, there is no apparent reason why the voting patterns in SSA should follow those found in the USA and Western Europe. In fact, the limited research that exists on this topic points out that this is not the case at all (Isaksson et al., 2014; Bratton, 2008; Bratton et al., 2010; Kuenzi and Lambright, 2010; Isaksson, 2010). Only education appears to have some positive effect, whilst with income and employment it rather seems the other way around. Given that there's been so little research on political participation in the SSA, it is interesting to see what mechanisms can be at play at a more local level and what welfare effects local resource extraction could entail both in terms of increased employment and political participation.

This thesis consequently seeks to investigate how local mining activity influences political participation rates. I also examine how resource curse measures evolve after mine opening and closing, and how these effect political activities. By applying a difference-in-difference strategy with Afrobarometer survey-data and GPS coordinates from the Raw Material Dataset, it will be possible to identify changes in participation behaviour as a result of the opening and closing of mines. The hypothesis is that mining activity leads to higher employment rates for the local population, which means that they will participate more as a result of less strict resource constraint conditions. However, the results suggest that resource curse effects also come into play with increased mining activity, effectively reversing much of the positive effect of better living conditions and larger networks.

I find that mining activity has a positive effect on employment, but this doesn't necessarily translate into higher political participation. The outcomes of the voting regressions give results that are hard to conclude upon whilst with demonstrations the results are predominantly positive. However, when using different variables as proxies for inter-election participation, the results from these are unclear. This could indicate that the trends in more

traditional forms of political participation aren't affected the same way as demonstrations. It appears that the resource curse effects, which all become stronger with mining activity, leads to less voting, and meeting attendance, and more demonstrations. This indicates that it isn't the increased employment rates or less binding resource constraints that lead to higher demonstration participation. These determinants generally seem to have a very small impact on participation rates. I rather interpret these results as a symptom of failing strategies for including the local population (if there exists any) in the economic beneficiation process. Consequently it may be the case that this has resulted in disillusioned democratic citizens that rather choose to voice their discontent through demonstrations and protests.

The thesis will start by giving an overview of the literature at hand on the relevant topics before the data material is presented. The empirical strategy and method utilised will then be explained. The results and analysis will follow, before the results are discussed and concluded upon.

2 Theory

Democracy and political participation

In order for a democratic government to be legitimate and govern a country according to its ideals, political participation is paramount. Since democracy means "the rule of the people", the people consequently have to express their opinions on matters as well as representatives for this definition to be valid (Bratton et al, 2005).

However, it is widely acknowledged that the degree of political participation among citizens is not equally dispersed. Studies on western democracies suggest that an unrepresentative selection of people dominate the statistics and that this group disproportionally represent those who are better off in society (Bartels, 2005; Brady et al, 2005; Griffin and Newman, 2005; Isaksson, 2010). If it is then true that policy preferences vary across socio-economic groups and that representatives are more attentive towards those who participate, then there's a risk that skewed political participation translates into skewed policies that favour those who participate (Bartels, 2005; Griffin and Newman, 2005; Wolfinger and Rosenstone, 1980).

Political inequality

Many years of research has shown that political participation tends to be unequally distributed among citizens (Bartels, 2005; Brady et al, 2005; Griffin and Newman, 2005; Isaksson, 2010). Poorer, less educated people vote and participate less and this results in a skewed mix of issues that are brought to the agenda. The more money and social capital you have, the more decisive is your vote and opinion (Bartels, 2005; Griffin and Newman, 2005; Wolfinger and Rosenstone, 1980).

Bartels (2005), Gilens (2005) and Griffin and Newman (2005) all investigate the responsiveness of American senators towards their constituents and finds that they vote a lot more in line with the opinions and interests of those with high income than those at the lower end of the scale. Bartels finds that American senators are about 50 % more responsive to those

who have an income within the top third percentile of the distribution, than to those in the middle third. The bottom third percentile has virtually no influence on the voting patterns of their senators at all. They all point to the fact that Americans with different income levels have very varying policy preferences, and that those who belong to the upper part of the distribution often have interests that are more in line with elites, pressure groups and senators themselves. This is therefore not necessarily a conscious action on the representative's part.

Griffin and Newman (2005) distinguish between voters and non-voters and point out that those who are richer, and have more social capital often participate more in other political activities in addition to voting. They are therefore much better at communicating their views on political matters. Those on the lower end of the income distribution then lose influence, and their preferences are overlooked, not only indirectly through that representatives don't vote in line with their interests, but also directly through the fact that they generally engage less in politics than their richer fellow constituents thereby failing to communicate their preferences and needs.

Determinants of political participation

These findings fit well with previous studies that have stressed the role of structural inequalities in resource endowments when examining the determinants of political participation (see for example Verba et. al, 1995; Brady et. al, 1995) . Because participation is costly with regards to time, money, knowledge and information, a person has to regard their political activity as worthwhile, meaning that the relative opportunity cost of participating must be within a certain limit.

In addition to individual endowments, social networks and social capital are seen as an important source of motivation, information and knowledge. Through networks and those one meets on a regular basis, individuals learn not only about political issues, but also about the political process and how to participate in it.

Early research by for example Verba and Nie (1972) and Wolfinger and Rosenstone (1980) focus on socioeconomic status (SES). Examining income, education and social capital levels, they find that SES is a strong indicator of political participation.

Brady, Verba and Schlozman (1995) look beyond SES and develop a resource model which summarises most of the newer findings in the literature at hand. The model takes time, money and civic skills such as communication and organisational capacities in to account. These resources are shown to be distributed unequally among different groups in society, and do not necessarily follow people's SES. Time and some types of civic skills is typically a resource that people with lower SES have more of. They distinguish between various types of activities such as voting, making donations and contributing with time to political activities.
One needs time to take part in political activity, money to make contributions, and have an interest in politics as well as necessary civic skills to vote. Through obtaining civic skills, people learn and understand the political scene so that participation becomes as efficient as possible and less costly. These elements are closely related to individual and contextual determinants of political participation that will be further explained below.

2.1.1 Education

Among the most important factors in political participation research has been voter's education level. Verba and Nie (1972) and Wolfinger and Rosenstone (1980) were the first to highlight these findings, which have only been confirmed in later research (Brady et al., 1995, and Verba et. al, 1995).

The studies show that when you are less educated, you are also less likely to vote. With respect to individual traits of the voter, they argue the following: Education helps develop the human capital and knowledge needed to meet the costs of political participation. One learns about the political process, the issues that are discussed and to form an opinion on these. The result is higher and more efficient participation amongst the groups that are better educated as the cost of participation is lowered.

The effect of education on political participation is twofold. It also contributes to a person's human capital level by the different people they meet and ideas and norms they're exposed to. During their education they form social networks and obtain social capital that exposes them to other people's views, opinions and competencies. This influences their political interest and motivates them to participate by building civic skills which brings down costs even further (Brady et al, 1995; La Due Lake and Huckfeldt, 1998).

2.1.2 Income and Employment

Much of the same mechanisms are at play when examining the role of employment and income. Again, the determinants have both an individual and contextual effect (see Isaksson et. al, 2014 for a discussion of this). Higher income is necessarily closely correlated with education, but it is most importantly a vital part of the opportunity cost mechanism. The more you earn, the less is the relative cost of participating. When considering individual political action, having a higher income will relax a person's resource constraint and thereby facilitate more political activity (Brady et al., 2005).

As mentioned above, several studies show that representatives' responsiveness to the wishes, demands and enquiries of middle and high income constituents are much higher than to that of low-income constituents. Therefore the potential gain of reaching through to a representative can also be much higher the more income one has (Bartels, 2005; Griffin and Newman, 2005)

In most cases people who earn an income acquire this through being employed. When examining the effect of employment on political participation, social networks are especially important. Whether or not you are employed affects if you are likely to be exposed to social settings where one can learn from other people's knowledge and opinions and be recruited to networks, groups or clubs. People can pursue their interests with others in similar situations as themselves and become increasingly aware of political matters that affect them. These networks can take any form and be either political or non-political organisations with unions, activity clubs or community groups as examples. It is argued that these organisations act as mobilising agencies, contributing to civic skills as well as motivational factors that stimulate engagement. Being unemployed thus cuts people off from political discussion and networks, rendering them with less resources that they can utilise in political activity. Having a job therefore makes people more informed about their interests and capable of acting on them (Verba et al.,1995; Bratton et al., 2010)

When the distribution of endowments within these fields are as skewed as political participation rates imply, the consequences can be many and severe. Political issues that have traditionally been the most important to the working class are down played and may be largely ignored due to the fact that the people who should be advocating these opinions don't participate. Workers' rights, the influence of unions, minimum wage levels and other

important economic issues aren't sufficiently discussed and it may be that both political and economic inequality persists and deepens as a result (Bartels, 2005).

2.1.3 Developing countries

However, all the studies mentioned above were conducted on the United States or other Western countries. Evidence from developing countries in Africa, Asia and Latin-America however, show trends that deviate from these results. One would perhaps expect the previously mentioned structural inequality mechanisms to be universal, and especially apply to developing countries as resource endowments and constraints are more likely to be binding in these areas of the world. Less developed political and physical infrastructure in addition to tighter individual resource constraints would indicate so.

Nevertheless, studies by Isaksson (2010), Bratton (2008), Bratton et al. (2010) and Kuenzi and Lambbright (2010) show that even though education is often correlated with higher participation, it is not so for income. Education is only correlated with higher inter-election activity and with respect to income it seems like the poorer participate no less, and maybe even more, than the more well-off citizens.

This naturally raises the question of why. Researchers propose two different explanations. One explanation could be that the poorer citizens use the channels of influence that they are given. Richer citizens can rely on other more direct methods of influence such as corruption, bribery and nepotism. The second is well-known and relies on the alleged importance of personal relationships and clientelism in African politics. Relatively resource poor people may be more prone to accept clientelist appeals, thereby increasing their participation rates.

The resource curse

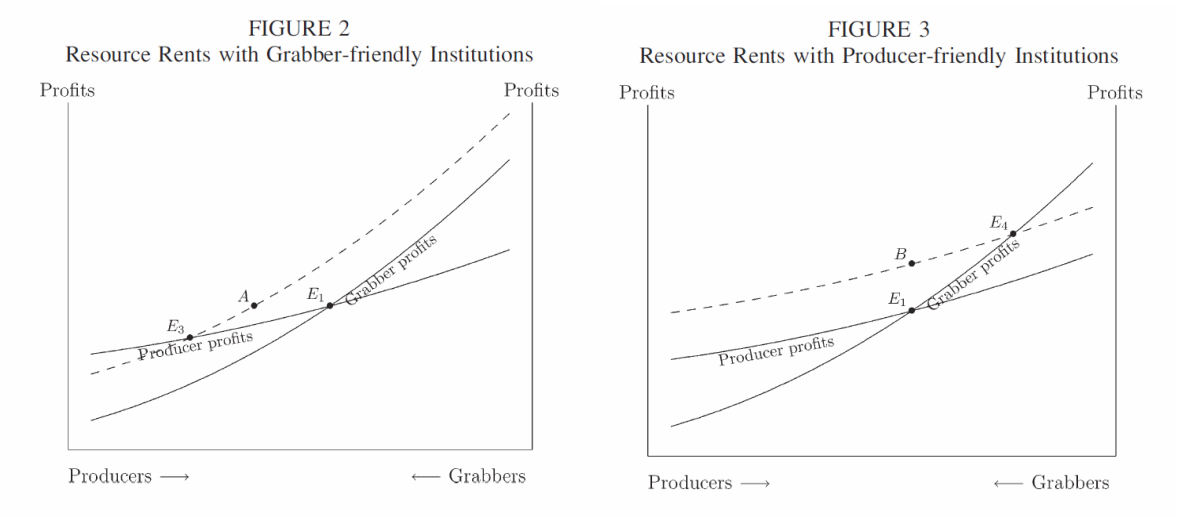
Another trait that many of these developing countries have in common is the fact that a large percentage of their GDP is based on export-oriented resource extraction, especially in the SSA. Numerous studies have shown a strong correlation between resource wealth, corruption and weak institutions, in addition to other negative effects such as high levels of inequality, the development of enclave economies, less long-term investments, large public debt and more civil conflict. This effectively lowers economic growth significantly, and is popularly known as the resource curse (Van der Ploeg, 2011).

The narrative of most of these effects goes as follows: When vast amounts of resource rents fall into the hands of state leaders who are not sufficiently controlled by institutional checks and balances, the leaders, in effect, have access to unlimited amounts of money. The heads of states are then in no way forced to distribute the resource rents fairly among the countries' citizens and can put it to any use that they see fit. This includes solely on themselves and their innermost circle. Potentially, they can also use this money to buy off opponents or citizens through clientilist schemes or huge inefficient public employment programs. Crack downs on civil unrest and political intimidation techniques are also quite common. As these developments evolve, governmental institutions begin to deteriorate even further as they lose more and more influence over their heads of State. Corruption and bribery becomes the new mean of political influence whilst efficiency and private enterprise continue to decline.

These negative developments in a countries' economy in the aftermath of receiving resource windfalls can in many cases be explained by, and result in low institutional quality. There are however varying point of views on this. Sachs and Warner (1997) claim that resource abundance has no effect on institutions, whilst Isham et al. (2003) say that they do. An article by Mehlum, Moene and Torvik (2006) reconcile the two views. They claim that there exists a "threshold level" of institutional quality where resource abundance becomes a blessing instead of a curse.

They develop a model where a country's growth rate is dependent on the institutional quality level that exists when the resources are discovered. The model makes a distinction between cases where production and rent-seeking are complementary and competitive activities. If a country initially has strong, accountable producer-friendly institutions, it is difficult for entrepreneurs to be rent-seekers without also being producers. This is not the case if institutions are grabber-friendly. Then the entrepreneurs will compete against each other trying to capture the rents from resource extraction fighting over what rents that do exist instead of creating more. Consequently, economic growth will be substantially lower than what is the case with producer-friendly institutions.

Figure 1: Resource rents with grabber- and producer friendly institutions



Figures are taken from Mehlum et. al, 2006, p. 1125-1126

These so-called "grabber-friendly institutions" can develop in a variety of ways and take several different forms. A survey article by Van der Ploeg lists a whole variety of explanations. Among the most highlighted explanations is how resource rents can hinder democratic development and sustain dictatorships. The government in power receives resource rents that permit them to pacify decent through military action, nepotism and buying off opponents. The rents allow governments to "bribe" voters with low taxes, government jobs and unproductive yet popular policies. This prevents redistribution of political power and keeps the current regime in place because they to a large extent can avoid transparency, accountability and resist modernisation. Eventually, this results in corruption, rent-seeking, mismanaged institutions and a failing economy (2011, p.16-17).

Maximizing the Benefits from Resource-based Industries

There are important exceptions to this rule, countries who have not only managed to avoid the resource curse, but also have low inequality measures as well as high voter-turnout. The first step to achieving this is to make sure that resource related windfall stays within the country and benefits the population as a whole, and not just civil servants and the state elite. It is also vital that the multiplier effects aren't exported and that linkage development occurs in the

vicinity of where the resource-extraction takes place, creating employment opportunities and economic growth in the region (Morris et al, 2011).

Hirschman describes development as an incremental process where "*One thing leads to another*," (1981, p.75) and highlights the importance of linkages in creating growth. He defines three different types of linkages through which a country's economy can profit on the resource sector. Morris et al. (2011) build further on these and define financial, consumption and production linkages as the most important ones. For these linkages to develop both the state and private companies have to create and implement strategies and policies to maximise them. However, these are influenced by several determinants, both intrinsic and contextual.

The intrinsic determinants refer to the fundamentals that have to be in place for a company to see it as profitable to start extracting resources and invest in an area. Krugman (1991) and Isard et al. (1998) point to, among other factors, logistics, flexibility and the relative costs of inputs and production. Contextual determinants are elements that the government can easier influence and promote, thereby creating an improved environment in which linkages and growth can develop both broader and faster. These include ownership, infrastructure, skills and capacity building, and policies and their implementation. (Morris et al.,2011; Moretti, 2010; Eggert, 2002).

Ownership is important in the sense that it can vary greatly how much knowledge the owners have of local skill, markets and suppliers. Depending on whether the concessionaires are privately or state owned their attitudes towards risk, profit and long-term investments can greatly influence how much of these local markets they make use of. Their attitudes towards corporate social responsibility can in these matters also be decisive.

Investment in long-term projects such as infrastructure and skills-training could also be influenced by the ownership of the resources. Infrastructure can be both physical and social, and depending on its nature, it can create either large or virtually non-existent spill-over effects. Institutional development and roads would in this context be beneficial for the whole local community.

Skills training and the development of technological know-how must also be viewed in a more long-term perspective. Companies and owners have the option to train locals rather than

import labour, and in this context a National System of Innovation could be very helpful. In fact, all countries that have succeeded in resource-related industries outside of extraction have all had major programs investing in skills-training and research and development (Wright and Czelusta, 2004).

Moretti (2010) develops a model of how local multipliers affect the economy and more specifically the size of the long term employment multiplier in the traded and non-traded sectors. He finds that multipliers have a much larger effect if the creation of a new position is in a high-tech industry with skilled rather than unskilled labour. Investment in skills-training and education could therefore be very profitable in the long run.

However, in order to develop and influence the development of these factors, it is vital that local and national governments take responsibility for designing long- and short-term strategies and rules for the sector, and make sure that these are implemented and enforced. Cooperation with the private sector and civil society is in this respect paramount.

Eggert (2002) has a more financial perspective with focus on welfare when he writes about how a country's government should manage their natural resources both in the short and long run. He defines challenges within four different fields. The first is within creation, where governments have to facilitate extraction so that it goes about as efficiently as possible. They also need to take social preferences for environmental quality and other social and cultural values into concern. The second is within distribution. The government needs to develop a scheme for how the wealth should be distributed amongst the general population. Third, the country needs to build institutions and mechanisms for handling volatile prices and structural changes in the economy. They must also seek to avoid problems that are often associated with resource wealth such as rent-seeking behaviour and corruption. Lastly, these countries also face challenges related to investment, ensuring that future generations also benefit from the wealth.

Empirical evidence

It is of course not always the case that the factors outlined above are followed or implemented in such a way that positive economic effects in the local community follow. The empirical evidence is scarce, but the research that does exist on local welfare effects of resource-based industries varies not surprisingly in their findings.

Vicente (2010) compares the West African island states of Sao Tomé and Principe and Cape Verde with respect to changes in perceived corruption levels after STP found oil. By gathering household survey data on corruption perception across a wide range of industries and public services, he finds that STP has in fact experiences higher perception of corruption since oil was discovered. The clearest increases were found in vote buying, education (namely in the allocation of scholarships) and customs. He interprets this as a sign of increased competition for state resources. However, he also emphasizes that corruption need not have an overall detrimental effect on an economy, and that more research is needed in these areas.

Aragon and Rud (2013a) also use household data, but focus on local communities around a Peruvian gold mine. They find positive economic effects and multipliers, especially within the agricultural sector and hypothesize that this is because of a corporate program to implement the local communities in their supply chain. Their second article on local economic effects of mining activity (Aragon and Rud, 2013b) examines pollution spill-over effects on agriculture in Ghana. Here, they find that emissions from modern gold mines reduce agricultural productivity with almost 40%. They highlight that these agricultural effects very rarely are included in cost-benefit analyses on mining projects, and that mining could consequently entail large redistribution effects from local population to the central government.

Caselli and Michaels (2013) also find overall negative welfare effects from resource extraction in Brazil. They conclude that oil windfalls, either offshore or onshore, have little or no positive effects on municipal non-oil GDP compositions. They point out that municipal revenues and spending seems to increase, but as survey-based measures of public goods and provision and household income reports no such differences, it is likely that most of the windfall end up in the pockets of civil servants.

and Tolonen (2013) seek to investigate local effects of resource extraction on a larger scale by exploring how the expansion of mining activity in SSA has impacted female employment. By matching panel data on industrial mines with survey data from across the continent, they investigate the effect of the openings and closing of mines. Their results show that a mine opening induces a shift in employment sectors where women move from working in agriculture to services. The likelihood of women earning cash income increases and they

work less seasonally. When a mine opens there are in other words several sectors that spurs job creation than solely those in the mining workforce. However, most of these effects are reversed when mines close.

Michaels (2011) examines historical data on southern USA and examines whether resource abundance slows down industrialisation, accumulation of education and if it leads to higher inequality. He finds that from 1940-1990 the manufacturing sector in oil abundant counties were of the same absolute size, but employed less people. These counties profited on a better educated workforce and higher GDP per capita which lead to higher inwards migration. By 1990 most of these advantages had diminished, but they still enjoyed slightly higher GDP per capita without inequality measures being any worse than in their neighbouring counties. All in all, Michaels concludes that even though resource based specialisation involves some long run costs, it can also spur long-term development.

Summing up

To sum up, research shows that economic and political inequality is closely related and that the two can mutually reinforce each other. Factors such as income, education and employment affect the level of both. Historically, these factors have explained a lot of the variation in political participation, but trends in developing countries seem to deviate somewhat from this. Why this is the case can be due to a number of factors that may or may not be a result of the resource curse. In order to escape this resource curse and make sure that resource extraction and exports leads to broad economic growth, the public and private sector as well as civil society must cooperate to ensure that ownership is long-term, sufficient infrastructure is built, that skill and capacity-building is on top of the agenda and most of all that the policies that are developed with all of these factors in mind are actually implemented and monitored. Macroeconomic issues also have to be taken into account. The question is then whether or not linkage development ensues, and that the consequent higher employment rates and economic growth in the area surrounding the mine has the positive effects on political participation that standard theory predicts.

3 Data and Definitions

In this thesis I will combine a longitudinal data set on large-scale mineral mines in Africa with Afrobarometer survey-data. The survey-data includes point-coordinates (GPS) on where the respondents live, which allows us to link them to mining activity.[1]

First, I link all the respondents to the different mines by measuring how far away from a mine's centre, given by its GPS-coordinate, the respondents live. This gives the variable *kilometres* which measures the distance each respondent has to a mine of any sort. The average distance to a mine is then 188 kilometres. The next step is to put all the respondents in groups that categorise how far away from mines they live. I calculate distances from the mine in circles with radii of 10, 25, 50, 75 and up to 100 kilometres. The mines are split up into three groups; active, inactive or suspended. In the given year, active mines engage in extraction and production, inactive mines have not been opened yet and suspended mines have been active, but are now closed.

I combine the above to construct an indicator variable that answers the following question: Is there at least one active mine within x kilometres of the respondent's household? If not, is there at least one mine that is inactive, or one mine that is suspended within the same range? If the answer is still no, the respondent will be coded as living in a non-mining area. However, if the person in question lives within the given range of several mines that are defined as active, inactive or suspended, the respondent will be coded as belonging to the treatment group if at least one of these were active the year she answered the survey. When looking at mine opening effects the respondents that live close to suspended mines are excluded. The same applies for respondents that live in the vicinity of inactive mines when examining the effect of the closing of mines.

[1] The matching and empirical strategy in this thesis follows that of Kotsadam and Tolonen (2013)

It is here assumed that any individual that lives within a given distance of an active mine will attempt to seek employment there. Also, future mines are assumed to have little effect on the economy, although there may be some activity related to the pre-production stages. The benefits from an active mine thus dominates those of one that is inactive. The respondents in question are then coded as active ==1 and inactive ==0 as these are mutually exclusive.

I use 50 kilometres as the baseline cut-off distance for when people seek employment at the mines. When the distance to the mine is greater than this, transportation costs that arise when working that far away from one's home is assumed to outweigh the benefits that accrue from employment. There are two reasons for why this might be. Firstly, the cost in terms of information and transport increase with distance from the mine. Secondly, the economic footprint of the mine decreases with distance. Other cut-off distances will however be used to test whether these assumptions hold.

Table 1: Distribution of respondents across countries and mines

Countries	**Total # of respondents**	**Active50**	**Inactive50**	**Suspended50**
Benin	2398	64	0	0
Botswana	2275	391	24	0
Burkina Faso	1200	160	32	16
Ghana	2397	646	48	631
Kenya	2368	0	0	96
Lesotho	2361	832	230	72
Liberia	1200	40	0	72
Madagascar	2631	0	0	0
Malawi	2387	0	0	0
Mali	2385	120	26	0
Mozambique	2367	236	0	0
Namibia	2194	407	2	6
Nigeria	4479	86	0	54
Senegal	2394	348	0	136
South Africa	3932	1398	20	275
Tanzania	1891	182	0	0
Uganda	4776	0	0	240
Zambia	2400	320	0	32
Zimbabwe	2236	711	0	749
Sum	**48271**	**5941**	**382**	**2379**

In total, close to 12% of the people who answered the surveys live within a 50 km radius of an active mine. This adds up to 5941 people. With respect to inactive and suspended mines

within the same distance, the percentages of people living in these areas are 0.8 % and 4.7 % respectively. This makes a total of 382 people in the vicinity of inactive mines and 2379 people in areas with suspended mines. These numbers could indicate that there is a degree of worker migration towards mining areas. So-called mining towns are a good example of this (Lange, 2006; Corno and de Walque, 2012).

Mining data

I use a dataset on the location of past (suspended), current (active) and future (inactive) industrial mines in Africa called the Raw Material Dataset (RMD). The mines are geocoded with point coordinates and yearly information on production levels as well as what is produced. The production volumes that are given are however somewhat unreliable as different mines and companies have different measures for different types of minerals. This makes it impossible to compare these numbers. The status of the different mines should nevertheless be reliable.

The data goes back to 1975 and up until 2010, but as I only have survey data for 2005-2006 and 2008-2009 I focus on these two periods. In total, I make use of 263 mines, of which there are 180 active, 13 inactive and 79 suspended. All of these mines are linked to survey respondents and some of the respondents are linked to several mines.

The RMD dataset focuses on mines of industrial size and thereby excludes all forms of artisanal, informal and small-scale mining (ASM). This type of mining activity in Africa is in many places an important part of people's livelihoods as it can exist both alongside and replace industrial sized mining activity. UNECA (2011) estimate that 8,1 million people are engaged in ASM. The definition for ASM mining is in this context set to a maximum of 50 employees and that the work conducted is more labour- than capital intensive. Nevertheless, ASM is overall of a much smaller format than industrial mining, and I therefore assume that the multiplier effects in these cases will be too small to have any recognisable effect. The external validity of the results from the empirical strategy that is utilised in this thesis will therefore only applies to large-scale mining.

Afrobarometer survey data

The individual-level data are taken from the third and fourth round of the Afrobarometer survey. They were conducted in 18 countries from March 2005 through February 2006, and 20 countries between March 2008 and June 2009 respectively. I have excluded the surveys conducted in Cape Verde in the fourth round since matches between people and mines didn't appear. Burkina Faso and Liberia were included in the fourth round, but not in the third. However, this shouldn't influence the basis for evaluation when using my DiD-approach. All together, the data is based on interviews with randomly selected individuals that are representative on a national level. My data consists of 48271 individual surveys, 21822 from round three and 26449 from round four when excluding those from Cape Verde.

My main outcome variables of interest are those concerning political participation. This is a very wide term where a lot of different types of actions could be included. However, I am of the opinion that political participation has to involve deliberate action where the aim is to influence political outcomes. I define it as "citizen acts to influence the selection of, and/or the actions taken by political representatives*"* Conge (1988). Operationalising this definition must accordingly entail recording some sort of *action* where the individual actively seeks to influence politicians or the make-up of their country's political elite. Besides voting which is the most obvious indicator, it is also important to try to capture how much people engage in politics between elections. The dependent variables in the regression on election and inter-election activity are therefore proxied by whether or not they voted in the last election, and whether they have participated in a demonstration over the last year. Those who were too young to vote or can't remember if they have participated in such activities have been excluded from the data.

Table 2: Descriptive statistics

Variable	Definition	Mean	s.dev
Mine variables			
Kilometers	Distance to active, inactive or suspended mine	1,884	1,594
Active50	At least one active mine within 50 km of respondent	0,059	0,235
Inactive50	At least one inactive mine within 50 km of respondent	0,002	0,049
Suspended50	At least one suspended mine within 50 km of respondent	0,027	0,161
Dependent variables			
Working	1 if respondent is currently in employment	0,352	0,478
Voted	1 if respondent voted in the last election	0,725	0,447
Demonstrated	1 if respondent participated in demonstration during past year	0,133	0,340
Raisedissue	1 if respondent joined others to raise an issue during past year	0,544	0,490
Meeting	1 if respondent attended a community meeting during past year	0,672	0,470
Control variables			
Urban	1 if respondent is living in an urban area	0,368	0,482
Age	Age in years	36,33	14,530
Age2	Age squared	15,31	12,895
Female	1 if respondent is female	0,501	0,500
Education	Level of education , 1: No education – 10: Postgraduate	3,117	2,017
Often_without_cash	1 if respondent goes often without cash	0,672	0,470
Radio news	Access to radio news, 0: never – 4: every day	3,068	1,354
Member, religious group	1 if respondent is member of a religious group	0,742	0,437
Other variables			
Free and fair elections	Elections, 1: Not free and fair – 4: Completely free and fair	2,529	1,204
Local corruption	Corruptness of local gov't councillors, 0: none – 3: all of them	1,286	0,867
Careful what you say	Concerning politics, 0: never – 3: Always	1,797	1,115

Overall, the data shows that people are generally quite interested in politics, with over 72 % having voted in the last election and 13.34 % having participated in a demonstration. There is however large countrywide variation in the data, where for example, the percentage of people having voted range from over 90% in Benin to around 63% in Botswana and Lesotho. The variations in having participated in a demonstration range from under 5% to almost 20%.

Other factors that can influence the level of political participation include local corruption levels, the degree of political intimidation, and the fairness of elections. Variables that describe the perception of these have been included to try and account for any local institutional resource curse effects that might be particularly prevalent in mining areas. These variables are described in table 2.

Other individual control variables like whether or not they are employed, how much education they have received, whether they have often gone without cash, if they have access

to radio news and whether they are a member of a religious congregation relates to the discussion in the theory chapter on resource constraints. The aim is to show how much an effect the individual resource base has on political participation rates. Demographic control variables are also included; these are displayed in table 2 and 3. They do not appear to vary much between the control and treatment groups, although it is noteworthy that the people living in inactive mining areas are more often unemployed, living in slightly less urban areas receive less education. The standard deviations on these means are very high, meaning that any conclusions drawn on the basis of these numbers would be uncertain.

Table 3: Treatment and control groups

	Active50		**Inactive50**		**Suspended50**	
Variable	**Mean**	**St.dev**	**Mean**	**St.dev**	**Mean**	**St.dev**
Mine variables						
Kilometers	0,226	0,157	0,372	0,120	0,282	0,144
Dependent variables						
Working	0,366	0,482	0,189	0,392	0,381	0,486
Voted	0,704	0,456	0,725	0,447	0,725	0,447
Demonstrated	0,154	0,361	0,064	0,245	0,093	0,290
Raised issue	0,511	0,500	0,606	0,489	0,528	0,499
Meeting	0,614	0,487	0,767	0,423	0,609	0,489
Control variables						
Urban	0,529	0,499	0,408	0,492	0,475	0,499
Age	37,324	15,0143	41,606	17,043	36,802	15,111
Age2	16,184	13,4372	20,208	15,836	15,826	13,656
Female	0,500	0,500	0,497	0,500	0,503	0,500
Education	3,516	1,931	2,554	1,868	3,648	1,833
Often_without_cash	0,590	0,492	0,641	0,480	0,646	0,478
Radio news	3,122	1,340	2,513	1,553	2,988	1,460
Member of religious group	0,722	0,448	0,568	0,496	0,804	0,397
Other variables						
Free and fair elections	2,529	1,238	1,843	1,089	2,660	1,203
Local corruption	1,287	0,873	0,817	0,861	1,266	0,792
Careful what you say	1,814	1,144	1,603	1,226	1,860	1,134

4 Empirical Strategy

This thesis aims to investigate how mining activity affects political participation in SSA. I plan to do this by combining survey data and GPS-coordinates, examining variables with two different strategies. First, by investigating if there are significant differences in variable values close to, and further away from mines at specific points in time. To examine the strength of these findings, I also employ a difference-in-differences (DiD) identification strategy. Because the ideal empirical strategy of conducting a randomized controlled experiment is unattainable, a natural experiment where real-world conditions and data mimic what would have happened in a randomized control experiment is the best viable option. A DiD-strategy fulfils these criteria under certain assumptions, and provides both a well-defined treatment group and a valid counterfactual control group.

4.1 Difference and distance

To begin with, I examine the differences in outcomes using an identification strategy that is purely spatial. By studying how answers to survey questions vary across space, and differ whether they are asked to people who live close to a mine or further away from it, we can obtain results that indicate whether or not mining activity can have an effect on employment status, political participation rates, election fairness, political intimidation rates and local corruption. A vector of individual controls including variables related to the resource constraint theory as well as resource curse perception is incorporated in the regressions. Country and year fixed effects are also added. The regression is of the following form:

$$Y_{it} = \beta_1 \cdot kilometers + \lambda X_i + \alpha_r + g_t + \varepsilon_{it}$$

However, it is important to remember that the results from these regressions are only suggestive as there can be other differences between areas closer and further away from the mines that aren't accounted or controlled for. If this regression were to be the only results,

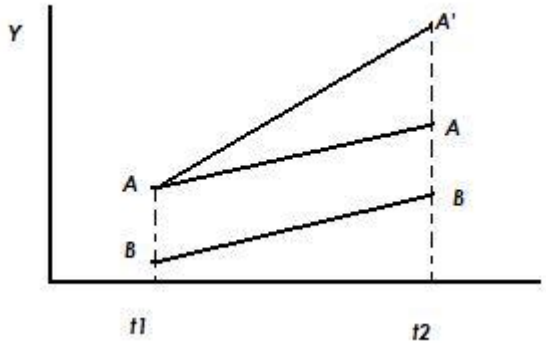
strong assumptions concerning population characteristics and mine opening would have to be made.

Therefore, I expand the difference-and-distance identification by adding a temporal component. Together, these components make up the differences-in-differences approach. This way, one can compare areas and results before and after a mine has opened/closed and not only areas that are within or outside the vicinity of a mine. Hence, this is an attempt to control for unobservable time-invariant characteristics that may influence selection into being a mining area.

Differences-in differences

Thus, my DiD estimation method combines a spatial-temporal estimation strategy with survey data. It aims to capture the effect of some kind of change on a treatment group by comparing it to a control group. Before the change takes place, the control and treatment groups have to have similar development trends, but the levels can still be different, as shown in figure 1 below. In absence of the treatment, the difference between the treatment group (A) and the control group (B) would be constant over time. However, if a change in the treatment group takes place, the aim is to establish the size and direction of the treatment effect by comparing the results in the treatment and control groups. How large is the estimated difference between A' and A?

Figure 2: DiD-strategy



In this particular case, one can estimate the treatment effect, i.e the effect of mining activity on working status, political participation and resource curse measures, by combining data on GPS-coordinates of mines and when these were active, inactive or suspended with survey data across time periods, both within and outside the vicinity of mines. Together these factors make up the two differences I need in order to identify a specific trend in a mining area. The first difference is the survey answers in mining areas before, during and after mining activity. This gives the results for points A and A'. The second difference gives points B from the answers to the same survey questions as in the mining areas, except this time they are asked to people that live in areas that are too far away from the mines to be affected by the activity there. By examining the different survey answers one can determine how much, or if, political participation, employment and resource curse trends have changed as a result of mining activity.

To determine the size of the treatment effect, the identification strategies distinguishes between three main groups of people. The first group lives within 50 km distance to one or more active mines. The second group lives within 50 km of an inactive mine or suspended mine. The third group consists of people that live more than 50 km away from any mine. The two baseline DiD regressions measures the effect of a mine opening and a mine closing.

$$Y_{it} = \beta_1 \cdot active50 + \beta_2 \cdot inactive50 + \lambda X + \alpha_r + g_{t\,i} + \varepsilon_{it}$$

$$Y_{it} = \beta_1 \cdot active50 + \beta_2 \cdot suspended50 + \lambda X_i + \alpha_r + g_t + \varepsilon_{it}$$

Where Y is the outcome for an individual *i* in year *t*, it measures employment status, political participation either in the form of voting activity or participation in demonstrations, or perception of local resource curse effects in the form of corruption, free and fair elections and political intimidation. These are regressed on a dummy *active50* for whether or not the person lives within 50 km of at least one mine, and either a dummy *inactive50* for whether or not the person lives within 50 km of a mine that hasn't opened yet, or a dummy *suspended50* for whether or not the person lives within 50 km of a mine that has been closed. In addition, a vector of individual control variables and time and country fixed effects are added. These are the same as in the difference-and distance regressions.

F-tests on the dummy variables regarding production status in the two DiD-regressions are then performed to show the difference between the active and inactive/suspended variables. The aim of a F-test is to show that there is a significant difference between the variables and that they therefore have different effects on the political participation outcome rates.

However, beside the occurrence of mineral resources, there can also be other factors within a country or a region that can influence the exact location of a mine. Although the placement of mineral resources is random, the discovery and extraction of such deposits is not (Eggert, 2002). Morris et al (2011) call these intrinsic determinants, and Krugman (1991) and Isard et. al (1998) highlight the access to, and relative price of inputs, transportation costs and agglomeration costs as most important when a decision is to be reached on whether or not to open a mineral deposit.

Fixed effects

If these are constant over time and only appear on a country level they can be controlled for by country specific fixed effects. This variable can also take into account other time-invariant factors such as the quality of regional institutions, specific mining strategies, attitudes and traditions regarding politics and participation in society, levels of economic development and sectorial composition that are specific for a single country. This improves the explanatory power and makes the causal claims of the regression more robust.

Individual fixed effects such as age, gender, and living in urban areas are also included in the regression to improve the explanatory power and control for omitted variables. It is however important to keep in mind that these are inherently prone to measurement errors which could result in attenuation biases. Fixed effects are usually persistent over time, but need not be. Employment status is an example. However, since measurement errors tend to vary from survey to survey, these two effects together may lead to variations in observed year-to-year changes in the fixed effects that are mostly noise. This might result in smaller fixed effects estimators, and they should therefore be interpreted with caution (Angrist and Pischke, 2009).

5 Results and Analysis

The results from the baseline regressions largely reject the hypothesis that people living in active mining areas are more politically engaged than others, even though the results regarding demonstration effects are stronger than in the voting activity regressions. I do however find that economic multiplier effects that have a positive impact on unemployment rates are present in active mining areas. This indicates that more people have a job, earn more and come into contact with networks of people in similar situations as themselves when living in mining areas. Individual and contextual factors that in theory should contribute to increased levels of political activity are consequently present, but they have very little effect on actual participation rates. Previous research points to similar findings and state that the amount of pecuniary resources a person has at its disposal has little effect on their willingness to participate, but offers little evidence to why this is the case.

One explanation for the absence of results could be that local resource curse effects come into play, effectively limiting political activity. In fact, when I investigate the effect of mining activity on levels of local corruption, political intimidation and the fairness of elections, these are all positive and significant, giving some suggestive evidence towards why patterns of political activity differ in SSA compared to western countries.

In the following chapter I first perform difference and distance regressions on working status, political activity and resource curse effects, before I compare these answers with similar difference-in-differences regressions. I then go on to try and explain the robustness in the results I found.

Difference and distance results

5.1.1 Employment status

When regressing employment status on the number of kilometres to the nearest mine the estimated coefficients are negative and highly significant, meaning that the people who live

further way from the mines are less likely to be working (Table 4). This gives strong support to my initial assumption that it is easier to find work in mining areas, thereby laying the foundation for relaxing individuals' resource constraints through higher income and more knowledge and social capital acquisition through attaining larger social networks.

Table 4: Difference and Distance Regressions on Employment and Political Participation

VARIABLES	(1) voted	(2) demonstrated	(3) working
kilometers	0.000	0.001	-0.010***
	(0.002)	(0.002)	(0.002)
urban	-0.041***	0.003	0.040***
	(0.005)	(0.004)	(0.005)
age	0.039***	0.002**	0.030***
	(0.001)	(0.001)	(0.001)
age2	-0.036***	-0.002***	-0.033***
	(0.001)	(0.001)	(0.001)
female	-0.024***	-0.046***	-0.098***
	(0.004)	(0.004)	(0.004)
education	0.003**	0.010***	0.036***
	(0.001)	(0.001)	(0.001)
often_without_cash	0.005	0.008*	-0.068***
	(0.005)	(0.004)	(0.005)
radio_news	0.012***	0.006***	0.016***
	(0.002)	(0.002)	(0.002)
member_religious	0.038***	0.030***	0.003
	(0.005)	(0.005)	(0.005)
local_corruption	-0.015***	0.011***	
	(0.003)	(0.002)	
careful	-0.004**	0.005***	
	(0.002)	(0.002)	
elections_free	0.007***	0.001	
	(0.002)	(0.002)	
Constant	-0.191***	0.162***	-0.442***
	(0.026)	(0.022)	(0.024)
Observations	36,410	35,768	46,998
R-squared	0.161	0.034	0.176

Notes: Standard errors in parentheses,*** p<0.01, ** p<0.05, * p<0.1. Year and country fixed effects have also been included in the regression, but the results aren't displayed

The other variables have estimated outcomes as expected and are all highly significant. Age and education level has a positive impact on working status whilst age2 and the female dummy have negative coefficients. The control variables related to monetary resources and radio access are positive and significant, but somewhat surprisingly being a member of a

religious group is not. Labour market theory would predict that being a part of a large network would make it easier to find a job (see for example Myers et al., 1991; Ioannides and Loury, 2004).

5.1.2 Political participation

The difference and distance regressions for political participation, represented by voter turnout and demonstration activity, give less uplifting results (Table 4). There are no significant effects in either direction, indicating that living close to a mine may have no effect on political participation rates at all. Part of the explanation for the absence of any results could be that the kilometres variable measures the distance to any mine, including the inactive and suspended ones, potentially giving the estimates a downward bias.

The individual control variables are significant and have estimated coefficients with signs mostly as expected. Age and education are positive whilst the female dummy and age2 are negative. It is worth noticing that this partially contradicts Isaksson's (2010) findings regarding education's effect on political activity. My regressions indicate that education has a positive impact not only in developed countries, but also in SSA on both election and inter-election activity.

With respect Isaksson's other findings however, the results largely coincide. Having access to radio news and being a member of a religious group has positive significant effects, meaning that determinants related to information are important when an individual decides to participate politically. The coefficients are also positive for the variable concerning being often without cash on both voting and demonstration activity, although it is only significant in the latter case. According to this variable it would then seem that lack of funds has no, or a positive effect on political participation which supports Isaksson's findings and contradicts the resource constraint theory.

This claim also receives some support from the results of the urban dummy. It is highly significant and negative in the voting regression and positive and insignificant with respect to demonstrations. This indicates that respondents living in cities vote less than those living in rural areas, and that, with some uncertainty; people in rural areas demonstrate more. If we assume that unemployment rates and information and transportation are generally lower in urban areas, the results, especially regarding voting activity, supports the claim by Isaksson

that poorer people participate more This contradicts theory and she calls for more research into why this is the case.

Part of the explanation could be that civil liberties are limited and that the institutional quality is low. Both Isaksson et al. (2014) and Krishna (2002) point out these factors as crucial for voter turnout and participation rates. The estimated coefficients concerning the degree of local corruption, free and fair elections and political intimidation confirms this picture although in very different ways depending on whether the results concern voting or demonstration activity. With respect to voter turnout, local corruption, less free and fair elections, and to what extent people feel they have to be careful when talking about politics, all have negative significant effects.

With respect to demonstration activity however, the result seem to be opposite, inspiring people to voice their discontent. Local corruption levels and the degree of political intimidation have significant positive effects on having participated in a demonstration, whilst whether the last election was free and fair has an insignificant positive effect. A good explanation for these results could be that political intimidation is largely concentrated on electoral processes and not on inter-election activity. Findings by Isaksson et al. (2014) support this view.

5.1.3 Resource curse effects

The regressions for each of the resource curse variables show that institutional quality and civil liberties deteriorate with proximity to mining activity.

The perception of local corruption decreases with distance to mines. It is nevertheless important to keep in mind that the mean value is 1,286 on a scale between 0 and 3. This shows that most respondents believe that corruption is a real problem whether they live close to mines or not. 83,04 % of the respondents believe that at least some of their local representatives are corrupt.

The control variables show that a person perceives their local councillors as increasingly corrupt when they live in urban areas, have higher education, and have radio access. If a respondent is a member of a religious group or increasingly old (age2 variable) they have more trust in their local representatives and think them less corrupt. A person's age or sex has no significant effects on their trust in local councillors.

Table 5: Difference and Distance Regressions on Local Resource Curse effects

VARIABLES	(1) local corruption	(2) free and fair elections	(3) careful what you say
kilometers	-0.007**	0.012***	-0.011**
	(0.003)	(0.004)	(0.004)
urban	0.086***	-0.018	-0.016
	(0.009)	(0.011)	(0.011)
age	0.002	-0.002	-0.008***
	(0.001)	(0.002)	(0.002)
age2	-0.003**	0.003	0.007***
	(0.002)	(0.002)	(0.002)
female	-0.013	-0.006	0.031***
	(0.008)	(0.010)	(0.010)
education	0.025***	-0.008***	0.004
	(0.003)	(0.003)	(0.003)
often_without_cash	0.082***	0.025**	0.056***
	(0.009)	(0.012)	(0.012)
radio_news	0.009***	0.001	-0.007*
	(0.003)	(0.004)	(0.004)
member_religious	-0.025**	0.031**	0.007
	(0.010)	(0.012)	(0.012)
Constant	1.088***	1.638***	2.391***
	(0.048)	(0.060)	(0.058)
Observations	39,754	43,387	45,093
R-squared	0.107	0.229	0.086

Notes: Standard errors in parentheses,*** p<0.01, ** p<0.05, * p<0.1. Year and country fixed effects have also been included in the regression, but the results aren't displayed

Some of the same effects are found when examining whether people perceived the last election as free and fair. The further away from mines the respondents live, the more they perceive the elections as equitable. The more education they have the more critical they are, possibly reflecting that these people have higher standards towards what democratic elections are and should be. Members of religious groups again have more faith in the system and perceive elections as more free and fair.

When looking at the results for the political intimidation measure, proxied by if respondents feel like they need to be careful of what they say when talking about politics, people are less worried about this the further away from mines they live. The respondents become less careful with age, whilst females and the poor are more cautious. It is nevertheless important to

remember that this result can be upwards biased by local social and political norms and not just by actual political intimidation.

With respect to the difference and distance regressions it is also important to bear in mind that there may be factors that aren't accounted for. Time-varying effects and difference in areas close to and further away from mines may influence the results in either direction. Hopefully, the full difference-in differences regressions can give a more comprehensive picture of how mining activity influences political participation.

Difference-in-Differences Regressions

In the full difference-in-difference regressions I replace the kilometres variable with an active50 variable that includes all the respondents that live within a 50 km radius of an active mine. This is the treatment group. I compare this group with respondents who live in an inactive50 or suspended50 area which are the control groups. Furthermore, I test whether there are differences between them by performing an F-test on their estimated coefficients. The results are described and explained below.

5.1.4 Employment status

The full DiD regressions (see table 6) further bolster the findings of mining activity's positive effects on employment status compared to both inactive and suspended activity. The sign of the active50 coefficient is positive and significant in both regressions, whilst inactive50 and suspended50 are negative as expected although only the inactive50 coefficient is significant. However, the F-tests confirm that there is a significant area difference in both cases. Living in an area with an active mine makes it more likely to have employment than living in areas where mines haven't opened yet or have been closed. The estimated impact of mine openings on employment rates is consequently an increase of 7,1 percentage points.[2] In comparison, the effect of increasing a person's education level by two categories on a scale from 1 to 10 has approximately the same effect. Estimating an exact effect on the closing of mines is difficult as the estimated suspended50 coefficient is insignificant.

[2] This figure is found by performing a subtraction of the estimated coefficients of Active50-inactive50.

Table 6: Difference in Differences Regressions on Employment Status

VARIABLES	(inactive) working	(suspended) working
active50	0.019***	0.020***
	(0.007)	(0.007)
inactive50	-0.052**	
	(0.023)	
suspended50		-0.008
		(0.010)
urban	0.043***	0.041***
	(0,005)	(0.005)
age	0.030***	0.030***
	(0.001)	(0.001)
age2	-0.033***	-0.033***
	(0.001)	(0.001)
Female	-0.099***	-0.098***
	(0.004)	(0.004)
Education	0.036***	0.036***
	(0.001)	(0.001)
often_without_cash	-0.069***	-0.068***
	(0.005)	(0.005)
radio_news	0.016***	0.016***
	(0.002)	(0.002)
member_religious	0.006	0.004
	(0.005)	(0.005)
Constant	-0.388***	-0.448***
	(0.025)	(0.024)
Observations	44,672	46,998
R-squared	0.175	0.176
F test:	8.928	6.478
p value	0.00281	0.0109

Notes: Standard errors in parentheses,*** p<0.01, ** p<0.05, * p<0.1. Year and country fixed effects have also been included in the regression, but the results aren't displayed

5.1.5 Political participation regressions

When looking at the political participation regressions, the full DiD-approach gives more uplifting results than the difference and distance regressions, but they are still not unambiguously conclusive.

Voted

When voted is the regressand the results (see table 7) are very unclear with estimated coefficients that are small and vastly insignificant. Active50 and inactive50 are negative, whilst suspended50 is positive. This makes it hard to conclude in either direction. The F-tests

are therefore accordingly unclear and this makes it difficult to establish whether voting trends change with mining activity at all.

It is however worth noticing that the estimated coefficients of the resource curse variables are all significant at a 5% level with coefficients that effect voter turnout negatively with respect to corruption and political intimidation and positively when elections are perceived as free and fair. If a respondent perceives all her local council men as corrupt, the likelihood that she voted in the last election decreased by 42 percent points. The resource constraint variables do not have the same explanatory power, although education seems to have some positive effect.

Table 7: Difference-in-Differences Regressions on Voting Activity

VARIABLES	(inactive) Voted	(suspended) voted
active50	-0.005	-0.002
	(0.007)	(0.007)
inactive50	-0.002	
	(0.025)	
suspended50		0.010
		(0,011)
urban	-0.037***	-0.041***
	(0.005)	(0.005)
age	0.039***	0.039***
	(0.001)	(0.001)
age2	-0.036***	-0.036***
	(0.001)	(0.001)
female	-0.023***	-0.024***
	(0.004)	(0.004)
education	0.002*	0.003*
	(0.001)	(0.001)
often_without_cash	0.005	0.006
	(0.005)	(0.005)
radio_news	0.012***	0.012***
	(0.002)	(0.002)
member_religious	0.040***	0.038***
	(0.005)	(0.005)
local_corruption	-0.014***	-0.015***
	(0.003)	(0.003)
Careful what you say	-0.004**	-0.004**
	(0.002)	(0.002)
elections_free	0.007***	0.007***
	(0.002)	(0.002)
Constant	-0.178***	-0.193***
	(0.027)	(0.026)
Observations	34,551	36,410
R-squared	0.160	0.161
F test:	0.0107	1.062
p value	0.918	0.303

Notes: Standard errors in parentheses,*** p<0.01, ** p<0.05, * p<0.1. Year and country fixed effects have also been included in the regression, but the results aren't displayed

Demonstrated

The regressions with demonstration activity as the dependent variable are more uplifting. All the area variables have signs as expected with the treatment group variables being positive, and the control group coefficients being negative. However, only the active50 variables are significant. The F-tests show that there is a difference in patterns in the suspended areas, but the test on inactive areas is inconclusive as the p-value of the F-test is only 11.5. This could be because the selection of respondents living in the vicinity of inactive mines is relatively small with only 382 individuals. This gives a high standard error which makes the results less robust. When comparing p-values, similar patterns can be found in the voted regressions.

Table 8: Difference-in-Differences Regressions on Demonstration Activity

VARIABLES	(inactive) Demonstrated	(suspended) Demonstrated
active50	0.014**	0.012**
	(0.006)	(0.006)
inactive50	-0.022	
	(0.022)	
suspended50		-0.015
		(0,009)
urban	0.004	0.002
	(0.004)	(0.004)
Age	0.002**	0.002**
	(0.001)	(0.001)
age2	-0.002***	-0.002***
	(0.001)	(0.001)
Female	-0.046***	-0.045***
	(0.004)	(0.004)
Education	0.011***	0.010***
	(0.001)	(0.001)
often_without_cash	0.008*	0.008*
	(0.004)	(0.004)
radio_news	0.006***	0.006***
	(0.002)	(0.002)
member_religious	0.030***	0.029***
	(0.005)	(0.005)
local_corruption	0.011***	0.011***
	(0.002)	(0.002)
Careful what you say	0.004**	0.004***
	(0.002)	(0.002)
elections_free	0.001	0.001
	(0.002)	(0.002)
Constant	0.051**	0.162***
	(0.023)	(0.022)
Observations	33,905	35,768
R-squared	0.034	0.034
F test	2.481	7.254
p value	0.115	0.00708

Notes: Standard errors in parentheses,*** p<0.01, ** p<0.05, * p<0.1. Year and country fixed effects are included, but they aren't displayed

With respect to the control variables it is most noteworthy that education is now positive and highly significant, again supporting Isakssons (2010) findings. All the resource constraint variables are also positive and significant including being often without cash. This strengthens the view that poor people at least participate more in intra-election politics. Following the results in the difference and distance regressions I again find that the resource curse variables have a positive impact on demonstration participation unlike the voted regressions. Increasing perception of corruption and political intimidation has positive and significant coefficients whilst whether elections are free and fair has a positive yet insignificant effect. Here, if a respondent is of the opinion that all her local politicians are corrupt, the likelihood that she has participated in a demonstration the past year increases with 33%.

5.1.6 Resource curse effects

Further investigating the local resource curse effects gives largely the same results as in the difference and distance regressions which especially apply for the control variables. The results for all three regressions are displayed below.

With respect to perception of corruption amongst local government representatives, the coefficients for active50, inactive50 and suspended50 have signs as expected and the F-tests are highly significant. Corruption is consequently perceived to be substantially higher in active mining areas. I find that a mine opening leads to a 6.7% increase in the mean.[3]

The same can be said for perception of political intimidation where the area variables follow the same patterns as the corruption regression. Consequently, people feel that they have to be more careful about what they say regarding politics where there is active mining extraction compared to inactive and suspended areas.

With respect to free and fair elections the results are unambiguously negative for active mining areas when suspended50 is the control group, whilst with inactive areas, both active50 and inactive50 coefficients are negative with inactive50 being the most negative. Both these coefficients are significant, and the F-test confirms that there is a difference in patterns across the two types of areas. This could be due to the before mentioned non-randomness of mining locations.

[3] This results is derived by subtracting active50-inactive50=0.194. this translates to6.7% of the mean 1.3

Table 9: DiD Regressions on local resource curse effects

	(inactive)	(suspended)	(inactive)	(suspended)	(inactive)	(suspended)
VARIABLES	**local corruption**	**local corruption**	**free and fair elections**	**free and fair elections**	**careful what you say**	**careful what you say**
active50	0.053***	0.020***	-0.072***	-0.064***	0.042**	0.036**
	(0.014)	(0.007)	(0.017)	(0.017)	(0.017)	(0.017)
inactive50	-0.141***		-0.231***		-0.218***	
	(0.049)		(0.060)		(0.058)	
suspended50		-0.008		0.095***		-0.052
		(0.010)		(0.026)		(0.026)
urban	0.080***	0.041***	-0.014	-0.018	-0.016	-0.015
	(0.010)	(0.005)	(0.012)	(0.011)	(0.012)	(0.011)
age	0.002	0.030***	-0.002	-0.002	-0.008***	-0.008***
	(0.001)	(0.001)	(0.002)	(0.002)	(0.002)	(0.002)
age2	-0.004**	-0.033***	0.003	0.003	0.008***	0.007***
	(0.002)	(0.001)	(0.002)	(0.002)	(0.002)	(0.002)
female	-0.012	-0.098***	-0.001	-0.006	0.033***	0.031***
	(0.009)	(0.004)	(0.011)	(0.010)	(0.011)	(0.010)
education	0.025***	0.036***	-0.008**	-0.009***	0.005	0.005
	(0.003)	(0.001)	(0.003)	(0.003)	(0.003)	(0.003)
often_without_cash	0.084***	-0.068***	0.030**	0.025**	0.058***	0.055***
	(0.010)	(0.005)	(0.012)	(0.012)	(0.012)	(0.012)
radio_news	0.010***	0.016***	0.002	0.001	-0.007*	-0.007*
	(0.004)	(0.002)	(0.004)	(0.004)	(0.004)	(0.004)
member_religious	-0.024**	0.004	0.034***	0.030**	0.009	0.007
	(0.010)	(0.005)	(0.013)	(0.012)	(0.012)	(0.012)
Constant	0.808***	-0.386***	1.658***	1.660***	2.399***	2.144***
	(0.052)	(0.024)	(0.061)	(0.060)	(0.059)	(0.061)
Observations	37,733	46,998	41,212	43,387	42,828	45,093
R-squared	0.110	0.176	0.229	0.229	0.083	0.086
F test:	15.34	6.478	6.847	31.32	19.40	9.863
p value	8.99e-05	0.0109	0.00888	2.20e-08	1.06e-05	0.00169

Robustness of results

Although the theory on determinants of political participation intuitively makes a lot of sense, there are very clearly some unknown determinants that drive the results when examining participation rates in SSA. Whatever these are, it is important to acknowledge that participation rates, especially with respect to voting, are quite high whether people live in mining areas or not, with a mean of 70.4 % when living in active mining areas and 72.7% otherwise. The relative variation in demonstration activity is larger with a mean of 15.4% if the respondents live in mining areas and 13.1% for those who don't. This could be part of the explanation for why the results are more conclusive with respect to demonstration activity than with voting. Nevertheless, I show that the resource constraint theory clearly does not cover the variation in voting and demonstration patterns that one would predict. Part of the explanation could be that the is dataset for example gives a correlation coefficient between working and often without cash as only -0.129, and of those who do have a job, 59% of them state that they are often without cash compared to a general mean of 67%. Being employed consequently doesn't necessarily imply that one isn't poor, even though your social network admittedly should still be larger than before. Local resource curse effects are nevertheless strong one of the main reasons why.

5.1.7 Changing Cut-off Distances

The main assumption in this thesis is nevertheless that mining activity creates economic multipliers that result in increased employment numbers, which again increases people's opportunity and ability to participate in all kinds of political activity. This is facilitated through increased income and larger social networks. This basic assumption is widely confirmed, which means that all the necessary requirements for both individual and contextual factors to start to play out are present. I have set a cut-off distance at 50 kilometres for when the multiplier effects start to lose their momentum and the gains from seeking jobs in an active mining area no longer outweigh the costs. Changing this cut-off distance to 25 and 50 and higher show that the economic multipliers are stronger or equally strong closer to the mines, but start to lose their significance further out. The coefficients in these cases become smaller, less significant or insignificant altogether, and the F-tests no longer hold.[4]

[4] See appendix, table A3- A8.

Besides creating jobs and economic multipliers I also hypothesize that mining activity leads to local resource curse effects. Changing the cut-off distance to lower and higher than 50 on these regressions gives much of the same results as in the baseline regressions. The size of the municipalities and local governments could explain the lack of variation in these results. If they are relatively large, everyone who lives inside the same borders will most likely experience the same degree of corruption, political intimidation and fairness of elections.

5.1.8 Altering baseline regressions

It is clear that resource curse effects are highly present in mining areas and that these do have a partially negative effect on the political participation outcomes. The resource constraint theory however, does not seem to have an equally strong effect on the outcomes. It would therefore be interesting to see if, and how much, the results from the baseline regressions change if we remove these variables.[5]

It is very much possible that the proxy variables that are included to test the resource constraint theory are bad control variables. This means that even though they do capture some omitted variable bias, they are also affected by the outcomes. These variables could in other words themselves be outcome variables when utilising the current empirical strategy (Angrist & Pischke, 2009, p: 64-68).

When investigating how the outcomes change when removing the variables that proxy being poor (often without cash), having access to radio news and being member of a religious group, it turns out that neither the coefficients, F-tests or adjusted R^2 change very much at all. This indicates that they are in fact bad variables that capture very little of the relevant variation. The only noticeable difference is that now both active50 and suspended50 coefficients are significant at 10 % level. The estimated coefficients show that when a mine closes, demonstration activity decreases with 2,7 percentage points.

Education however does seem to have a little more effect on the outcome. This is especially prevalent in the demonstrated and working regressions, which makes a lot of sense since they were strongly significant and relatively influential on the outcomes in question. This follows a lot of the pre-existing research on economic multipliers in mining areas in general and

[5]These results are on DiD-regressions only and can be found in the appendix, table A1-A2

political participation trends in SSA especially. High levels of education increases the effect of economic multipliers, in addition to increasing the level of inter-election participation (Moretti, 2010; Eggert, 2002; Morris et al., 2011; Kotsadam & Tolonen, 2013; Isaksson et al., 2014; Isaksson 2010; Bratton, 2008).

5.1.9 Alternative Definitions of Inter-election Activity

A lot of these articles have employed different definitions of inter-election activity than demonstration attendance. It would therefore be interesting to test the validity of the above findings by investigating if the outcomes are similar when employing alternative proxies for inter-election participation. Going together with others to raise an issue or attending a community meeting are other good operationalisations. These variables still fulfil the requirements of my political participation definition as the individuals are actively seeking to influence political outcomes through public action.

The results outlined in the first sections of this chapter indicate that there is very little correlation between election and inter-election activity. The coefficients from the regressions differ substantially, and we see a closer correlation between mining activity and demonstrations than with voting activity, which in the latter case is virtually non-existent. Even though one votes or participates in a demonstration, it therefore doesn't necessarily mean that one participates in the other. The correlation coefficient between voting and demonstrating clearly shows this. With the other measures of inter-election participation however, the correlations are much stronger with only 3.5 % correlation between voting and demonstrating, whilst the corresponding numbers for raising an issue and attending a community meeting is 16 % and 19.4% respectively.

Table 10: Correlation coefficients of political activity

	Voted	**Demonstrated**	**Raised issue**	**Com. Meeting**
Voted	1,000			
Demonstrated	0.0346	1,000		
Raised issue	0.1602	0.2497	1,000	
Com. Meeting	0.1939	0.1693	0.5562	1,000

Table 11: DiD Regressions on Alternative Inter-Election Definitions

VARIABLES	(inactive) raised issue	(suspended) raised issue	(inactive) com. meeting	(suspended) com. meeting
active50	-0.029***	-0.022***	-0.038***	-0.035***
	(0.009)	(0.008)	(0.008)	(0.008)
inactive50	-0.040		0.009	
	(0.030)		(0.027)	
suspended50		-0.008		-0.019
		(0.013)		(0.012)
urban	-0.084***	-0.090***	-0.117***	-0.123***
	(0.006)	(0.006)	(0.005)	(0.005)
age	0.017***	0.017***	0.021***	0.021***
	(0.001)	(0.001)	(0.001)	(0.001)
age2	-0.015***	-0.015***	-0.019***	-0.019***
	(0.001)	(0.001)	(0.001)	(0.001)
female	-0.107***	-0.107***	-0.080***	-0.080***
	(0.005)	(0.005)	(0.005)	(0.005)
education	0.021***	0.022***	0.009***	0.009***
	(0.002)	(0.001)	(0.001)	(0.001)
local_corruption	-0.003	-0.004	-0.014***	-0.014***
	(0.003)	(0.003)	(0.003)	(0.003)
Careful what you say	0.005*	0.005**	-0.003	-0.003
	(0.002)	(0.002)	(0.002)	(0.002)
elections_free	0.003	0.004*	0.013***	0.013***
	(0.002)	(0.002)	(0.002)	(0.002)
Constant	0.340***	0.379***	0.440***	0.498***
	(0.031)	(0.028)	(0.027)	(0.026)
Observations	34,699	36,592	34,763	36,664
R-squared	0.084	0.085	0.123	0.124
F test:	0.148	1.073	2.817	1.714
p value	0.701	0.300	0.0933	0.190

Notes: Standard errors in parentheses,*** p<0.01, ** p<0.05, * p<0.1. Year and country fixed effects have also been included in the regression, but the results aren't displayed

Further investigating causal relationships between mining activity and attendance of community meetings and raising issues give very diverging results. In the original demonstration regressions, the resource curse variables had the opposite effect of those in the voting regressions, giving a positive effect on the outcome. The same effects were found when people lived in proximity of active mines whilst, inactive and suspended mines had a negative effect.

In comparison, the alternative definitions all have negative significant active50 variables, meaning that mining areas have less of both of these types of political activities. However, none of the F-tests show that there is a difference in behaviour between the treatment and control groups. Furthermore, the effects of the resource curse variables vary a great deal more than in the demonstration regressions. Whether elections are free and fair have a stronger impact on these outcomes than with demonstrations. In fact, less free and fair elections has a negative effect on attendance at community meetings, and to some degree on raising issues, especially in suspended mining areas. When people believe that they have to be careful what they say about politics, it's more likely that people go together and raise an issue, but it has an insignificant negative effect on community meetings. With local corruption, attendance at community meetings is negatively affected, the results for raising an issue are similar, but insignificant.

There are in other words few links between these types of more "traditional" political activities and demonstrations and protest marches. On the other hand, comparing them to voting outcomes is also difficult since the mining activity variables in the latter case are vastly insignificant. However, examining the effects of the local resource curse variables on the alternative definitions could make us understand their outcomes a little better. Attendance at community meetings have results that mainly follow those of voting, whilst with "raising an issue" it becomes difficult to compare since the outcomes in this case are mostly insignificant. The "careful what you say" variable could indicate that raising an issue follow patterns more along the lines of demonstration activity, but the signs of the other variables suggest otherwise.

Reasons for why these outcomes differ so much from any of the other measurements of political activity could be many, and maybe there are some decisive factors that haven't been controlled for. In addition, it could also be that the variables measure other topics besides political ones that are raised or discussed at meetings. It may be that at least some of these issues can be dealt with and solved amongst the participants without having to involve politicians. Whether these variables are then measures of political activity is consequently a question of definition. With the definition of political activity that I utilise, my opinion is that having participated in an election or in a demonstration is a better measure of political participation than attending community meetings or raising an issue with others.

It could also be that because of the resource curse issues a lot of these mining areas obviously deal with, people see demonstrations as a more potent way of voicing their discontent. Compared to other more conventional and "quiet" ways of making their opinions heard, such as attending community meetings, raising an issue or participating in elections, joining demonstrations and protests gets the message across in a clearer and more efficient manner. It could also be the result of a spurious connection where mining activity influences a third factor such as inequality which again leads to more demonstrations.

5.1.10 Selection Biases and other Influencing Factors

When employing an empirical strategy with a difference-in-differences method, it's based on the assumption that the areas one compare would have similar developments if the treatment effect, in this case a mine opening, didn't occur. Inactive mining areas should in other words have outcomes that follow similar patterns to those in areas outside of the economic reach of mining activity. However, a lot of my regressions with inactive variables have given significant results, and this indicates that they are in fact different from non-mining areas. I can point to two probable sources of why these deviations occur.

The first is that the inactive variable captures pre-production stages where economic multipliers start to play out, prior to actual extraction, with the ensuing political consequences. Another possible explanation is that there is a selection bias. It entails that mining areas are different even before the industrial extraction stages have begun. These results confirm the findings of Eggert (2002), which state that even though the distribution of mineral resources is random, the discovery of them is not. Cost and access of labour, institutional quality and infrastructure are some of the factors that could be decisive. (Krugman, 1991; Isard et al., 1998). However, whether inactive areas are different from non-mining areas or not is of little importance as I perform n F-test. This test either confirms or reject that active mining has an effect, and this is ultimately what we are interested in.

Apart from these initial differences, it is also important to try and rule out any changes that might occur simultaneously as the treatment effect. If these are unaccounted for, they could erroneously give the difference estimation a bias. Although these unknown factors can be very hard to identify and control for, the following arguments are an attempt at addressing and possibly ruling out some or most of them.

Although the dataset I've used doesn't contain data on the factors I address, I use Kotsadam and Tolonens (2013) paper on mineral mining and female employment as a reference. This paper doesn't address political participation and resource curse effects directly, but they do cover employment effects in mining areas. As economic multipliers and employment constitute the basic assumptions on which my hypotheses build upon, I propose that the results outlined below should at least be suggestive. The data that's utilised in the paper is from the Demographic and Health Surveys and the same mining data that I have employed. Altogether, the data should be sufficiently comparable to be able to draw similar results on the basis of my findings as the ones that are described below.

5.1.11 The Emergence of Mining Towns and Work Migration

There is evidence that natural resource activity and mining booms attracts people who are looking for work (Lange, 2006; Corno and de Walque, 2012). Potentially, this could create a selection issue if these people have different attitudes towards political activity and perceptions of corruption, political intimidation and the definition of free and fair elections. Although the economic multipliers can also come about as a result of inward migration, it would be interesting to see if there are any differences in trends amongst the people who have never moved. Kotsadam and Tolonens (2013) paper show that the results for local inhabitants, who have lived near the mines all their lives, follow those of the baseline regressions and that this selection issue has little impact on the baseline results.

5.1.12 Infrastructure

Other time-varying factors that can be a source to possible erroneous conclusions is the building of new infrastructure. This is known to lead to higher local economic development and an increase in the effect of multipliers. If new infrastructure appears around active mines, this is usually a direct result of mining activity, but it can also be exogenous. Even though the sample size in their alternative regressions is significantly reduced, Kotsadam and Tolonen (2013) show that proximity to roads has little effect on the outcome, They find that there is no difference in the employment effects in areas with large roads compared to small roads and so this evidence suggests that infrastructure is not driving the results.

5.1.13 World prices and Mining Intensity

The same paper also investigates the effect of world prices and mining intensity on respondents' employment statuses. More active mines in relative closeness to the individual's place of living should theoretically result in stronger economic multipliers. By including a measure of mining intensity, they find that this does indeed increase the likelihood of respondents being employed. Higher world prices on the mineral that's extracted in the respondents' local mines also seems to have a positive effect on employment.

.

6 Conclusion

The main aim of this thesis was to investigate how local mining activity influences welfare, and political participation rates in SSA. Traditional participation theory predicts that when people get a job and a steady income the relative cost of voting declines as they are in a better financial situation and have larger networks. The network effects can be especially important as workers who meet people in similar situations often motivate and teach each other about political topics and how to go about when they want to participate. They can help each other formulate opinions and take a stand on issues that influences their everyday lives.

Unfortunately, research also shows that poorer people vote and participate much less than their richer co-citizens. Issues that are brought to the agenda, discussed and past in national and regional assemblies also have a tendency to favour the rich rather than the poor. This could potentially create a vicious cycle where economic and political inequality reinforces each other.

However, the research that exists on political participation rates in Africa gives very different results from those that have been found in western countries. If anything, those with less resources participate more. Those who have attempted to explain these results point to traditional clientelist schemes and that those who have more money and connections prefer to find other channels through which they can influence political outcomes such as bribery and nepotism.

I wanted to examine other possible determinants of political participation in the SSA and take a closer look at how resource abundance and civil liberties could influence outcomes. My thesis builds upon a difference-in- differences strategy on two waves of Afrobarometer survey data combined with the Raw Material Dataset's GPS-coordinates of past, present and future mines in the SSA. This data allowed me to see how employment rates, political

participation and perceptiveness of corruption, free and fairness of elections and political intimidation changes when mines open or close.

My results mainly support earlier research on this topic, but I also find that local resource curse effects can be a decisive factor. The resource curse is commonly known as the impact natural resource abundance has on countries or regions with initially low institutional quality. Without adequate checks and balances the governments are consequently increasingly prone to rent-seeking, corruption, growth in inequality and political engineering towards less democratic regimes.

To make natural resource abundance into a blessing rather than a curse the literature at hand emphasizes that the population as a whole needs to be able to reap the benefits from these resources. Making sure that the owners of the resources and the government work together to invest in infrastructure, skills-training and linkage development is in this respect paramount. Building up institutions that can manage the macroeconomic challenges that come with the vast amount of revenues that these resources can produce is also of utmost importance.

Although many countries in SSA has experienced vast economic growth and in many cases managed to build up a middle class, my results indicate that strategies for linkage development (if they at all exist), have to a large degree failed in satisfying local populations. Instead mining activity results in a high prevalence of resource curse effects that has a substantial negative effect on political participation outcomes.

In essence, I find that although mining activity leads to higher employment this doesn't necessarily result in higher political participation rates or living standards. Despite the fact that people are employed they still often go without cash, and even if increased employment did have a positive effect on participation rates, they are effectively offset by factors related to the resource curse. The results on voting are highly indecisive, and the same goes for more traditional forms of inter-election activity such as raising an issue or attending community meetings. There is however a positive impact on demonstration activity, and it is very interesting to see that resource curse effects in this case has a positive effect on attendance. In the other measures of participation it is rather the other way around.

It is nevertheless important to bear in mind that general participation rates are quite high, especially in national elections. When taking into account that I had somewhat limited time and access to different types of data and variables, it could be interesting to extend my regressions and analysis. How much countries' democratic past influences outcomes is one factor. Other variables that could give more insight into determinants of political participation, the prevalence of local resource curse effects and the connection between these two, could be regional fixed effects, institutional quality and levels of economic development and inequality, both on a regional and national level.

There are in other words plenty of topics related to welfare effects of local resource abundance that require further research. Topics such as prevalence of CSR and local linkage programs could be one interesting direction to take. A closer investigation into how windfalls are distributed between local and central government could also give interesting insights into how to ensure the best possible management of natural resources. For example, how does this distribution influence local and national economic growth and inequality rates? What sectors are positively influenced, and could the increased local employment rates be wholly or partly explained by larger governments and bureaucracies rather than local economic growth?

With respect to political participation rates in SSA more in depth research is needed both with respect to individual and contextual determinants. A closer investigation into clientilist schemes and ties between governments and richer, more influential citizens could give some indications. Now that many countries in SSA have a growing middle class it will be interesting to see how this affects political processes, agendas and outcomes. Future research will give indications of in what direction democracies in SSA are developing.

7 Litterature

Afrobarometer Network (2005) Round 3 survey manual and dataset. Compiled by the Afrobarometer Network, February 2005
http://afrobarometer.org/data/round-3-merged/item/751-merged-round-3-data-18-countries-2005

Afrobarometer Network (2075) Round 4 survey manual and dataset. Compiled by the Afrobarometer Network, February 2007
http://afrobarometer.org/data/data-rounds-merged/item/749-merged-round-4-data-20-countries-2008

Angrist, J. D., & Pischke, J. S. (2008). *Mostly harmless econometrics: An empiricist's companion*. Princeton university press.

Aragon, F. M. andJ. P. Rud (2013a): "Natural Resources and Local Communities: Evidence from a Peruvian Gold Mine," *American Economic Journal: Economic Policy*, 5(2), 1–25.

Aragón, F. M., & Rud, J. P. (2013b). Modern Industries, Pollution and Agricultural Productivity: Evidence from Ghana. *International Growth Centre*.

Bartels, L. M. (2005). *Economic inequality and political representation*. Mimeo, Princeton University.

Brady, H. E., Verba, S. and Lehman Schlozman, K. (1995). Beyond Ses: A resource model of political participation. The American Political Science Review, 89(2), pp. 271-294.

Bratton, M. (2008). Poor people and democratic citizenship in Africa. in Krishna, A. (ed.) *Poverty, participationand democracy: A global perspective*, New York: Cambridge University Press.

Bratton, M., Mattes, R. B., & Gyimah-Boadi, E. (2005). *Public opinion, democracy, and market reform in Africa*. Cambridge University Press.

Bratton, M., & Chu, Y. M. Lagos (2010)"Who votes? Implications for new democracies". *Taiwan Journal of Democracy*, *6*(1), 1-30.

Caselli, F. and G. Michaels (2013): "Do Oil Windfalls Improve Living Standards?" *American Economic Journal: Apllied Economics.*

Conge, P. J. (1988). The concept of political participation: toward a definition.

Corno, L. and D. de Walque (2012): "Mines, Migration and HIV/Aids in Southern Africa," *Journal of African Economies*, 21(3), 465–498.

Eggert, R. (2002): "Mining and Economic Sustainability: National Economies and Local Communities," *MMSD Paper*, 19

Gerber, A. S., Green, D. P. and Larimer, C. W. (2008). Social Pressure and Voter Turnout: Evidence from a Large-Scale Field Experiment. *American Political Science Review*, 102(1), pp. 33-48.

Gilens, M.(2005). Inequality and democratic responsiveness. *Public Opinion Quarterly*, 69(5), pp. 778-796.

Griffin, J. D. and Newman, B. (2005). Are voters better represented? *The Journal of Politics*, 67(4),pp. 1206-1227

Hirschman, A.O., (1981) Essays in Trespassing: Economics to Politics and Beyond. Cambridge University Press, New York

InterraRMG (2013): http://www.rmg.se/Products/RawMaterialsData.aspx.

Ioannides, Y. M., & Loury, L. D. (2004). Job information networks, neighborhood effects, and inequality. *Journal of economic literature*, 1056-1093.

Isaksson, A-S. (2010). Political participation in Africa: Participatory inequalities and the role of resources. Working Papers in Economics, no. 462, University of Gothenburg.

Isaksson, A.S., Kotsadam, A., Nerman, M. (2014) The Gender Gap in African Political Participation: Testing Theories of Individual and Contextual Determinants. *The Journal of Development Studies* Vol. 50, Iss. 2, 2014

Isard, W., Azis, I. J., Drennan, M. P., Miller, R. E., Saltzman, S., & Thorbecke, E. (1998). Methods of regional and interregional analysis. *Methods of regional and interregional analysis*.

Isham, J., Woolcock, M., Pritchett, L., & Busby, G. (2005). The varieties of resource experience: natural resource export structures and the political economy of economic growth. *The World Bank Economic Review*, *19*(2), 141-174.

Kotsadam, A., & Tolonen, A. (2013). Mineral Mining and Female Employment. Oxcarre Research Papers, 114.

Krishna, A. (2002). Enhancing political participation in democracies: What is the role of social capital?. *Comparative Political Studies*, 35(4), pp. 437-460

Krugman, P. (1991). Increasing Returns and Economic Geography. *The Journal of Political Economy*, *99*(3), 483-499.

Kuenzi, M., & Lambright, G. M. (2007). Voter turnout in Africa's multiparty regimes. *Comparative Political Studies*, *40*(6), 665-690.

Lange, S. (2006): *Benefit Streams from Mining in Tanzania: Case Studies from Geita and Mererani*. CMI Reports.

La Due Lake, R. and Huckfeldt, R. (1998). Social capital, social networks, and political participation.
Political Psychology, 19(3), pp. 567-584.

Mehlum, H., Moene, K., & Torvik, R. (2006). Institutions and the resource curse*. *The Economic Journal*, *116*(508), 1-20.

Michaels, G. (2011). The Long Term Consequences of Resource-Based Specialisation*. *The Economic Journal*, *121*(551), 31-57.

Morris, M., Kaplinsky, R., & Kaplan, D. (2012). "One thing leads to another"—Commodities, linkages and industrial development. *Resources Policy*.

Myers, Charles A., and George P. Shultz. "Social networks and labor-market outcomes: Toward an economic analysis." *The American economic review* 81.5 (1991): 1408-1418.

Sachs, J. D., & Warner, A. M. (2001). The curse of natural resources. *European economic review*, *45*(4), 827-838.

Schlozman, K. L., Burns, N. and Verba, S. (1999). What Happened at Work Today?: A Multistage Model of Gender, Employment, and Political Participation. *The Journal of Politics*, 61(1), pp. 29-53

Union, A. United Nations Economic Commission for Africa (UNECA)(2011). *Minerals and Africa's Development Report*.

Van der Ploeg, F. (2011). Natural resources: curse or blessing?. *Journal of Economic Literature*, 366-420.

Vicente, P. C. (2010). Does oil corrupt? Evidence from a natural experiment in West Africa. *Journal of Development Economics*, *92*(1), 28-38.

Wolfinger R. E. and Rosenstone, S. J. (1980). *Who votes?* New Haven: Yale University Press

Wright, G., & Czelusta, J. (2004). Why economies slow: the myth of the resource curse. *Challenge*, *47*(2), 6-38.

8 Appendix

Table A1: Alternative DiD-regression on Employment Status and Political Participation

VARIABLES	(inactive) working	(suspended) working	(inactive) voted	(suspended) voted	(inactive) demonstrated	(suspended) demonstrated
active50	0.022***	0.024***	-0.003	-0.000	0.014**	0.012*
	(0.007)	(0.007)	(0.007)	(0.007)	(0.006)	(0.006)
inactive50	-0.051**		-0.003		-0.023	
	(0.023)		(0.025)		(0.022)	
suspended50		-0.007		0.013		-0.015*
		(0.010)		(0.011)		(0.009)
urban	0.051***	0.050***	-0.037***	-0.041***	0.003	0.002
	(0.005)	(0.005)	(0.005)	(0.005)	(0.004)	(0.004)
age	0.031***	0.030***	0.040***	0.040***	0.002***	0.002***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
age2	-0.033***	-0.033***	-0.036***	-0.036***	-0.003***	-0.003***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
female	-0.102***	-0.101***	-0.024***	-0.024***	-0.046***	-0.046***
	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)
education	0.041***	0.041***	0.005***	0.005***	0.012***	0.012***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
local_corruption			-0.015***	-0.015***	0.011***	0.012***
			(0.003)	(0.003)	(0.002)	(0.002)
careful			-0.004**	-0.004**	0.004**	0.005***
			(0.002)	(0.002)	(0.002)	(0.002)
elections_free			0.007***	0.008***	0.001	0.001
			(0.002)	(0.002)	(0.002)	(0.002)
Constant	-0.583***	-0.423***	0.001	0.091***	0.109***	0.149***
	(0.023)	(0.023)	(0.025)	(0.024)	(0.023)	(0.021)
Observations	45,072	47,427	34,803	36,684	34,134	36,019
R-squared	0.169	0.169	0.158	0.159	0.032	0.033
F test:	9.575	7.477	5.08e-05	1.217	2.692	7.400
p value	0.00197	0.00625	0.994	0.270	0.101	0.00652

Notes: Standard errors in parentheses,*** p<0.01, ** p<0.05, * p<0.1. Year and country fixed effects have also been included in the regression, but the results aren't displayed

Table A2: Alternative DiD-regression on Resource Curse Effects

VARIABLES	(inactive) corruption	(suspended) corruption	(inactive) elections	(suspended) elections	(inactive) careful	(suspended) careful
active50	0.048***	0.046***	-0.073***	-0.065***	0.039**	0.034**
	(0.014)	(0.014)	(0.017)	(0.017)	(0.017)	(0.017)
inactive50	-0.149***		-0.230***		-0.227***	
	(0.049)		(0.060)		(0.058)	
suspended50		-0.049**		0.091***		-0.055**
		(0.021)		(0.026)		(0.026)
urban	0.077***	0.081***	-0.016	-0.020*	-0.023*	-0.022**
	(0.009)	(0.009)	(0.012)	(0.011)	(0.012)	(0.011)
age	0.003*	0.002	-0.002	-0.001	-0.008***	-0.008***
	(0.001)	(0.001)	(0.002)	(0.002)	(0.002)	(0.002)
age2	-0.004***	-0.004**	0.003	0.003	0.007***	0.007***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
female	-0.017*	-0.018**	-0.001	-0.006	0.033***	0.032***
	(0.009)	(0.008)	(0.011)	(0.010)	(0.010)	(0.010)
education	0.023***	0.023***	-0.008**	-0.009***	0.002	0.002
	(0.003)	(0.002)	(0.003)	(0.003)	(0.003)	(0.003)
Constant	1.509***	1.202***	1.320***	1.509***	2.406***	2.159***
	(0.048)	(0.045)	(0.058)	(0.060)	(0.057)	(0.059)
Observations	38,035	40,080	41,547	43,748	43,187	45,478
R-squared	0.108	0.105	0.228	0.228	0.082	0.084
F test:	15.95	17.47	6.748	30.30	20.45	10.00
p value	6.53e-05	2.92e-05	0.00939	3.73e-08	6.13e-06	0.00157

Table A.3: DiD- regressions on employment rates with cut-off distance 30 km

VARIABLES	(inactive) working	(suspended) working
active25	0.014	0.014
	(0.009)	(0.009)
inactive25	-0.123***	-0.036***
	(0.041)	(0.013)
suspended25		
urban	0.051***	0.051***
	(0.005)	(0.005)
age	0.030***	0.030***
	(0.001)	(0.001)
age2	-0.033***	-0.033***
	(0.001)	(0.001)
female	-0.102***	-0.101***
	(0.004)	(0.004)
education	0.041***	0.041***
	(0.001)	(0.001)
Constant	-0.479***	-0.466***
	(0.024)	(0.024)
Observations	46,109	47,427
R-squared	0.170	0.169
F test: active25-inactive25=0	10.95	11.15
p value	0.000939	0.000842

Notes: Standard errors in parentheses,*** p<0.01, ** p<0.05, * p<0.1. Year and country fixed effects have also been included in the regression, but the results aren't displayed

Table A.4: DiD- regressions on demonstration and voting activity, cut-off distance 25 km

VARIABLES	(inactive) voted	(suspended) voted	(inactive) demonstrated	(suspended) demonstrated
active25	0.003	0.003	0.022***	0.022***
	(0.009)	(0.009)	(0.008)	(0.008)
inactive25	0.002		-0.015	
	(0.045)		(0.040)	
suspended25		0.013		-0.014
		(0.013)		(0.012)
urban	-0.041***	-0.042***	0.002	0.001
	(0.005)	(0.005)	(0.004)	(0.004)
age	0.040***	0.040***	0.002***	0.002***
	(0.001)	(0.001)	(0.001)	(0.001)
age2	-0.037***	-0.036***	-0.003***	-0.003***
	(0.001)	(0.001)	(0.001)	(0.001)
female	-0.025***	-0.024***	-0.046***	-0.046***
	(0.004)	(0.004)	(0.004)	(0.004)
education	0.005***	0.005***	0.012***	0.011***
	(0.001)	(0.001)	(0.001)	(0.001)
local_corruption	-0.015***	-0.015***	0.012***	0.012***
	(0.003)	(0.003)	(0.002)	(0.002)
careful	-0.004**	-0.004**	0.004**	0.005***
	(0.002)	(0.002)	(0.002)	(0.002)
elections_free	0.008***	0.008***	0.001	0.001
	(0.002)	(0.002)	(0.002)	(0.002)
Constant	0.092***	0.051**	0.056**	0.151***
	(0.024)	(0.024)	(0.022)	(0.021)
Observations	35,591	36,684	34,934	36,019
R-squared	0.158	0.159	0.032	0.033
F test:	0.000327	0.385	0.858	6.898
p value	0.986	0.535	0.354	0.00863

Notes: Standard errors in parentheses,*** p<0.01, ** p<0.05, * p<0.1. Year and country fixed effects have also been included in the regression, but the results aren't displayed

Table A.5: DiD- regressions on resource curse effects with cut-off distance 25 km

VARIABLES	(inactive) corruption	(suspended) corruption	(inactive) elections	(suspended) elections	(inactive) careful	(suspended) careful
active25	0.058***	0.057***	-0.125***	-0.120***	0.040*	0.039*
	(0.018)	(0.018)	(0.022)	(0.022)	(0.022)	(0.022)
inactive25	-0.233***		-0.304***		-0.415***	
	(0.085)		(0.106)		(0.102)	
suspended25		-0.045*		0.042		-0.096***
		(0.026)		(0.033)		(0.032)
urban	0.081***	0.081***	-0.016	-0.018	-0.021*	-0.021*
	(0.009)	(0.009)	(0.012)	(0.011)	(0.011)	(0.011)
age	0.002*	0.002	-0.001	-0.001	-0.008***	-0.008***
	(0.001)	(0.001)	(0.002)	(0.002)	(0.002)	(0.002)
age2	-0.004***	-0.004**	0.002	0.003	0.007***	0.007***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
female	-0.017**	-0.018**	-0.005	-0.006	0.033***	0.032***
	(0.008)	(0.008)	(0.010)	(0.010)	(0.010)	(0.010)
education	0.022***	0.023***	-0.009***	-0.009***	0.003	0.002
	(0.002)	(0.002)	(0.003)	(0.003)	(0.003)	(0.003)
Constant	1.198***	1.139***	1.680***	1.692***	2.391***	2.428***
	(0.046)	(0.047)	(0.057)	(0.057)	(0.057)	(0.055)
Observations	38,912	40,080	42,511	43,748	44,193	45,478
R-squared	0.107	0.105	0.227	0.228	0.082	0.084
F test:	11.12	11.18	2.768	18.15	19.33	12.93
p value	0.000854	0.000827	0.0962	2.05e-05	1.10e-05	0.000323

Notes: Standard errors in parentheses,*** p<0.01, ** p<0.05, * p<0.1. Year and country fixed effects have also been included in the regression, but the results aren't displayed

Table A.6: DiD- regressions on employment rates with cut-off distance 100 km

VARIABLES	(inactive) working	(suspended) working
active100	0.006	0.009
	(0.006)	(0.006)
inactive100	-0.063***	
	(0.020)	
suspended100		0.007
		(0.008)
urban	0.055***	0.051***
	(0.005)	(0.004)
age	0.030***	0.030***
	(0.001)	(0.001)
age2	-0.033***	-0.033***
	(0.001)	(0.001)
female	-0.101***	-0.101***
	(0.004)	(0.004)
education	0.042***	0.041***
	(0.001)	(0.001)
Constant	-0.428***	-0.429***
	(0.025)	(0.023)
Observations	43,267	47,427
R-squared	0.171	0.169
F test:	11.97	0.0451
p value	0.000540	0.832

Notes: Standard errors in parentheses,*** p<0.01, ** p<0.05, * p<0.1. Year and country fixed effects have also been included in the regression, but the results aren't displayed

Table A.7: DiD- regressions on demonstration and voting activity, cut-off distance 100 km

VARIABLES	(inactive) voted	(suspended) voted	(inactive) demonstrated	(suspended) demonstrated
active100	-0.006	-0.004	0.005	0.003
	(0.006)	(0.006)	(0.006)	(0.005)
inactive100	0.008		-0.016	
	(0.023)		(0.020)	
suspended100		0.011		-0.018**
		(0.008)		(0.007)
urban	-0.038***	-0.041***	0.001	0.002
	(0.005)	(0.005)	(0.004)	(0.004)
age	0.040***	0.040***	0.002***	0.002***
	(0.001)	(0.001)	(0.001)	(0.001)
age2	-0.036***	-0.036***	-0.002***	-0.003***
	(0.001)	(0.001)	(0.001)	(0.001)
female	-0.024***	-0.024***	-0.047***	-0.046***
	(0.004)	(0.004)	(0.004)	(0.004)
education	0.006***	0.005***	0.012***	0.012***
	(0.001)	(0.001)	(0.001)	(0.001)
local_corruption	-0.014***	-0.015***	0.010***	0.012***
	(0.003)	(0.003)	(0.002)	(0.002)
careful	-0.005**	-0.004**	0.005**	0.004**
	(0.002)	(0.002)	(0.002)	(0.002)
elections_free	0.007***	0.008***	0.002	0.001
	(0.002)	(0.002)	(0.002)	(0.002)
Constant	0.088***	0.084***	0.050*	0.159***
	(0.030)	(0.024)	(0.028)	(0.021)
Observations	33,153	36,684	32,543	36,019
R-squared	0.159	0.159	0.033	0.033
F test	0.432	3.069	1.101	7.178
p value	0.511	0.0798	0.294	0.00738

Notes: Standard errors in parentheses,*** p<0.01, ** p<0.05, * p<0.1. Year and country fixed effects have also been included in the regression, but the results aren't displayed

Table A.8: DiD- regressions on resource curse effects with cut-off distance 100 km

VARIABLES	(inactive) corruption	(suspended) corruption	(inactive) elections	(suspended) elections	(inactive) careful	(suspended) careful
active100	0.072***	0.059***	-0.078***	-0.057***	0.045***	0.033**
	(0.013)	(0.012)	(0.015)	(0.014)	(0.015)	(0.014)
inactive100	-0.102**		-0.287***		-0.137***	
	(0.044)		(0.052)		(0.050)	
suspended100		-0.010		0.120***		-0.098***
		(0.017)		(0.021)		(0.021)
urban	0.077***	0.081***	-0.013	-0.021*	-0.013	-0.022*
	(0.010)	(0.009)	(0.012)	(0.011)	(0.012)	(0.011)
age	0.002	0.002	-0.002	-0.001	-0.007***	-0.008***
	(0.001)	(0.001)	(0.002)	(0.002)	(0.002)	(0.002)
age2	-0.004**	-0.004**	0.004*	0.003	0.007***	0.007***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
female	-0.019**	-0.018**	-0.011	-0.006	0.034***	0.032***
	(0.009)	(0.008)	(0.011)	(0.010)	(0.011)	(0.010)
education	0.023***	0.023***	-0.009***	-0.009***	0.000	0.002
	(0.003)	(0.002)	(0.003)	(0.003)	(0.003)	(0.003)
Constant	1.066***	1.454***	1.913***	1.453***	2.201***	2.214***
	(0.061)	(0.046)	(0.064)	(0.061)	(0.075)	(0.061)
Observations	36,294	40,080	39,824	43,748	41,413	45,478
R-squared	0.109	0.105	0.227	0.229	0.086	0.085
F test:	16.07	16.57	17.29	68.79	13.76	38.43
p value	6.12e-05	4.69e-05	3.21e-05	0	0.000208	5.73e-10